

Critters: Diversity was 'jaw-dropping'

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"It's a bit of what we call ecological roulette," said lead author James Carlton, a marine sciences professor at Williams College in Williamstown, Massachusetts.

It will be years before scientists know if the 289 Japanese species thrive in their new home and crowd out natives. The researchers roughly estimated that a million creatures traveled 4,800 miles across the Pacific Ocean to reach the West Coast, including hundreds of thousands of mussels.

Invasive species pose a major problem worldwide with plants and animals thriving in areas where they don't naturally live. Marine invasions in the past have hurt native farmed shellfish, eroded the local ecosystem, caused economic losses and spread disease-carrying species, said Bella Galil, a marine biologist with the Steinhardt Museum of Natural History in Tel Aviv, Israel, who wasn't part of the study.

A magnitude 9 earthquake off the coast of Japan triggered a tsunami on March 11, 2011, that swept boats, docks, buoys and other man-made materials into the Pacific. The debris drifted east with an armada of living creatures, some that gave birth to new generations



John W. Chapman

Marine sea slugs from a derelict vessel from Iwate Prefecture, Japan, washed ashore in Oregon in 2015. Researchers reported Thursday that nearly 300 species of fish, mussels and other sea creatures hitchhiked across the Pacific Ocean on debris from the 2011 Japanese tsunami, washing ashore alive in the United States.

while at sea.

"The diversity was somewhat jaw-dropping," Carlton said. "Mollusks, sea anemones, corals, crabs, just a wide variety of species, really a cross-section of Japanese fauna."

The researchers collected and analyzed the debris that reached the West Coast and Hawaii over the last five years, with new pieces arriving Wednesday in Washington. The debris flowed across the North Pacific current, as other objects do from time to time,

before it moved north with the Alaska current or south with the California current. Most hit Oregon and Washington state.

Last year, a small boat from Japan reached Oregon with 20 good-sized fish inside, a kind of yellowtail jack native to the western Pacific, Carlton said. Some of the fish are still alive in an Oregon aquarium. Earlier, an entire fishing boat — the Saisho-Maru — arrived intact with five of the same 6-inch fish swimming around inside. The boat is on display at the Columbia River

Maritime Museum.

Co-author Gregory Ruiz, a Smithsonian marine ecologist, is especially interested in a Japanese parasite in the gills of mussels. Elsewhere in the world, these parasites have taken root and hurt oyster and mussel harvests and they hadn't been seen before on the West Coast.

The researchers note another huge factor in this flotilla: plastics.

Decades ago, most of the debris would have been wood and that would have degraded over the long ocean trip, but now most of the debris — buoys, boats, crates and pallets — are made of plastic and that survives, Carlton said. And so the hitchhikers survive, too.

"It was the plastic debris that allowed new species to survive far longer than we ever thought they would," Carlton said.

James Byers, a marine ecologist at the University of Georgia in Athens, who wasn't part of the study, praised the authors for their detective work. He said in an email that the migration was an odd mix of a natural trigger and human aspects because of the plastics.

"The fact that communities of organisms survived out in the open ocean for long time periods (years in some cases) is amazing," he wrote.

Dredging: Army Corps will hold public hearing in Astoria on Oct. 17

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"We place it along eroding shorelines, in the river," Stokke said. "We try to place material near shore to support the jetties and shorelines north and south of the Columbia."

Since 1890, the Army Corps estimates more than 1 billion cubic yards of sediment has been dredged between the mouth of the Columbia and Vancouver. The Army Corps does about half the annual dredging through its vessels the Essayons and Yaquina, while also contracting with companies.

Getting full

About 15 of the 20 or so designated upland sites where dredge spoils are placed are at or nearing capacity, said Jeff Henon, a spokesman for the Army Corps.

The Army Corps is in the scoping stages of a new

20-year channel maintenance plan, gathering public comment on strategies to place the dredged materials off-channel, and on ways to reduce the need for dredging.

"We definitely already do this with pile dikes or wing dams," Stokke said. "They direct river flow toward the channel, which keeps a faster flow. We have over 200 structures. We've been constructing them since the 1880s."

Sponsoring the new 20-year plan with the Army Corps are the Port of Portland and Washington ports in Vancouver, Woodland, Kalama and Longview. The Ports each sponsored a project finished in 2010 to deepen the Columbia shipping channel to 43 feet.

The Army Corps is holding public hearings along the river to gather comments on how the channel should be maintained. On Oct. 17, they will be in Astoria.

Stroke: 'Within a minute after we got it out, he could start moving his left arm'

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"He was fighting me, because he wasn't thinking quite right," she said. "He wanted me to help him up. I tried one time, two times. I said, 'Ron, I would like you to lay down on the floor so I can look at you and see what's going on.'"

Leino, who had worked at a hospital in Alaska, asked Paapke to smile and lift his arm or leg. By then, she knew he was having a stroke and called 911.

Within five minutes, responders with the Lewis and Clark Fire District arrived and stabilized Paapke until Medix

took over. Within an hour of the stroke, Paapke was at Columbia Memorial Hospital.

At 5:30 p.m., Dr. Stewart Weber, a vascular neurologist at OHSU, received an alert on his pager from Columbia Memorial, where a doctor determined Paapke was having a sizable stroke. He connected via the hospital's telemedicine program and examined Paapke. A brain scan showed a blood clot running 12 centimeters up Paapke's carotid artery from his neck to his brain.

"We decided that he would probably benefit the most from getting clot-busting medication," Weber said.

Paapke was given a shot of tPA, or tissue plasminogen activator, used to dissolve blood clots. Only about 5 percent of stroke patients receive the drug, which needs to be administered within three hours. But the clot wasn't dissolved by the medication, making Paapke a good candidate for a newer treatment at OHSU known as a mechanical thrombectomy.

Paapke was flown to Portland by Life Flight Network and by 7:30 p.m. was being stretched into OHSU's emergency department.

Plaque from smoking

Dr. Hormozd Bozorgchami,

an interventional neuroradiologist at OHSU, inserted a catheter into an artery in Paapke's groin, threading it through his aorta and into the carotid artery.

"It was filled with plaque from smoking," Bozorgchami said of Paapke's artery. The doctor inserted a stent mesh used to reinforce weak vessels.

Within a half-hour, Bozorgchami pulled out the stent, and with it the blood clot, a long, snaking mass of coagulated blood cells. It was the largest blood clot he had pulled out in

six years at OHSU, Bozorgchami said.

"Within a minute after we got it out, he could start moving his left arm, which was totally paralyzed, and give us a thumbs up," Weber said. "It was pretty miraculous, almost an immediate recovery."

Prayers

Paapke's friends and family prayed for him the entire time he was gone, Leino said.

"I'm just praying that it continues to be as great as it's come out so far, because his life and

my life could have been completely different, if everything didn't work as smoothly."

With about a month to go before his next checkup, Paapke's goal is to quit smoking and lose about 5 pounds. Since being released from the hospital, he has been going around thanking the responders with Lewis and Clark, Medix, Life Flight, Columbia Memorial and OHSU whose response he said was textbook.

"I'd like to thank everyone involved," he said. "It was a great team effort."

Collaboration

Jennifer Lycette, MD
Oncologist

As a medical oncologist, I work closely with my colleagues in the CMH-OHSU Knight Cancer Collaborative and at OHSU to develop comprehensive treatment plans that are specific to the person and their particular cancer.

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